REMARKS

Applicant responds hereby to the final Office Action mailed March 30, 2011, in this application.

The Office Action objects to the drawings under 37 CFR 1.83(a) for use of "cup spring" (claim 32), rejects claims 27-29 under 35 USC §112, second paragraph, rejects claims 1-3, 10, 13, 17-20, 22, 23 and 26 under §103(a) over Raines in view of US Patent No. 3,905,374 to Winter (Winter), rejects claims 4, 5, 6, 7, 8 and 25 under §103(a) over Raines in view of Trott, rejects claim 14 under §103(a) over Raines in view of Hutchins, rejects claims 15-16 under §103(a) over Raines in view of Jasch, rejects claim 24 under §103(a) over Raines, rejects claims 27-29 and 32 under §103(a) over Raines in view of Jasch further in view of Winter still further in view of Hutchins, rejects claim 30 under §103(a) over Raines in view of Arnegger further in view of Winter and rejects claim 31 under §103(a) over Raines in view of Arnegger further in view of Winter still further in view of Jasch.

In response to the objection to the drawings, applicant respectfully asserts that Figs. 1 and 2 show a plate-like bearing flange 38, a fastening screw (42) and a spring element (24). The Specification at page 5, lines 30-31, states that the device includes a plate-like bearing flange 38, a fastening screw (42) and a spring element (24) embodied as a cup spring. Applicant respectfully asserts that element (24), as shown in Figs. 1 and 2, is a cup spring, and respectfully requests withdrawal of the objection to the drawings under 37 CFR 1.83(a), therefore

In response to the rejection of claims 27-29 under 35 USC §112, second paragraph, applicant amends independent claim 27 as shown above to make clear that

each of the more than eight form-locking elements include a chamfer and that in a mounted state, the spring element automatically deflects the tool past each chamfer of each of the more than eight form-locking elements into a rotary position in which the tool can be fixed by tightening the fastening screw.

Applicants respectfully request withdrawal of the rejection of claims 27-29 under 35 USC §112, second paragraph, therefore.

Claims 1-3, 10, 13, 17-20, 22, 23 and 26

To support the rejection of independent claims 1 and 18, the Examiner asserts that modifying Raines **A.)** to include a radius associated with one position or the form locking element eight times as large as a radius of the centering element to realize better connection, and that the conditions of the claim are disclosed in the prior art so that the claim merely provides an optimum value or workable range, which requires only routine skill, and therefore obvious under the holding of *In re Aller*, 105 USPQ 233, **B.)** to provide at least twelve form-locking elements to increase the number of degrees of freedom of the blade is a mere duplication of working parts, which requires only routine skill, and therefore obvious under the holding of *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8 and **C.)** to modify the locking element by providing a trapezoidal cross section which is perpendicular to an axis of the drive shaft as taught by Winter in order to obtain a device that provides a secure and stable engagement of the blade would have been obvious.

Applicants respectfully disagree that in view of Raines, **A.)** it would have been obvious to include a radius associated with one position or the form locking element

eight times as large as a radius of the centering element to realize better connection is merely a matter of optimizing a range.

Raines discloses a universal attachment assembly for securing saw blades (16) to an actuator shaft (12) of an oscillating surgical saw (10). Blades (16) are held between a fixed receptor plate (14) on shaft (12) and a selected surface (82) from which circular mounting bosses (84, 85) extend. The mounting bosses (84, 85) engage through apertures (44) of saw blade (16) with apertures (34) of receptor plate (14). A locking nut (20) is provided to hold the receptor plate (14) and the mounting disk (24) together and to secure the saw blade (16) between the receptor plate (14) and the mounting disk (24).

A careful review of Raines (Fig. 12), makes clear that Raines does not teach or suggest a radius of a form-locking element that is four or eight times as large as a radius of a centering element. Such a claimed configuration provides a large space for the twelve form-locking elements such that a long lever for transmitting torque can be achieved with comparatively little material stress in the region of the form-locking element without losing precision in a centering operation (see the Specification at page 1, lines 31-35). There is no general condition for this feature, or suggestion for its advantages found in Raines.

For that matter, extending a radius associated with Raines' form-locking elements 84 and 85 to eight (8) times the radius of centering element 80 would extend the position of the form-locking elements outside the bounds, or outer circumference of the surface 82 of Raines' disk 24. Hence, such modification would not be possible, and therefore, non-obvious.

Perhaps as importantly, Raines' mounting bosses or form-locking elements 84, 85 are configured with circular cross sections, where the twelve form-locking elements as claimed have a trapezoidal cross section perpendicular to the drive shaft, required by applicant's claims 1 and 18.

Applicants further disagree that in view of Raines, **B.)** it would have been obvious to provide at least twelve form-locking elements to increase the number of degrees of freedom of the blade as a mere duplication of working parts.

In the invention as claimed, each of the twelve form-locking elements have a trapezoidal cross section, which is perpendicular to an axis of the drive shaft (16), to enable the hand-held power tool to be used universally in various positions with simultaneously more secure torque transmission (see the Specification at page 2, lines 28-32). The 12 form-locking elements allow for twelve-fold rotational symmetry providing the device and tool both with triple symmetry and with quadruple symmetry (see the Specification at page 3, lines 1-4). As such, the claimed configurations are useful for fastening, for example, a triangular grinding plate or a circular saw blade, which features and advantages are taught or suggested by Raines.

For that matter, Raines was designed so that a saw blade is held between a fixed receptor plate (14) and profiled mounting disk (24) using three mounting bosses (84, 85), as can be seen in Figs 3-5 and 11-14.

Modifying Raines' surfaces 82 and 92, including apertures (86) and annular boss (96), by providing at least twelve form-locking elements to increase the degree of freedom of the blade, as suggested by the Examiner (to accommodate 12 bosses evenly spaced at each $\pi/6$ radians about the circumference, or to allow for rotation

about same angular positions, as claimed) is not a simple matter of duplicating parts, where the resulting modification lacks "synergistic combination," the operative holding in *St Regis Paper Company*. That is, the twelve-fold rotational symmetry that provides the device and tool both with triple symmetry and with quadruple symmetry in the 12 form-locking elements provides for the synergistic combination, neither taught nor suggested by Raines.

Applicants further disagree that **C.)** it would have been obvious to modify Raines' locking element by providing a trapezoidal cross section which is perpendicular to an axis of the drive shaft, as taught by Winter, in order to obtain a device that provides a secure and stable engagement of the blade would have been obvious.

Winter teaches a spindled driver 18 having external splines 19. While external splines 19 of driver 18 may be said to comprise a trapezoidal cross section which is perpendicular to an axis of the driver shaft 18, the external splines 19 are not equivalent to form-locking elements located on a bearing flange for fastening to an axially mounted tool, as claimed. Winter's external splines 19 are part of the flat metal arm 11 comprising osteotomy knee blade 10.

Winter teaches a tool 11 upon which is mounted driver 18 with trapezoidal shaped external splines 19. In the invention as claimed, the 12 form-locking elements (12) are connected to a device which corresponds to Winter's oscillating power tool 21. Winters does not teach or suggest 12 form-locking elements. Hence, there is no teaching or suggesting for modifying Raines, as taught or suggested by Winters, to realize a device with twelve form-locking elements (34) located on receptor plate (14) that are distributed uniformly over an angular range defined by an entire circumference

of a circular bearing face of the receptor plate (14) or twelve form-locking elements (34) having a trapezoidal cross section perpendicular to the drive shaft, as claimed.

For at least these reasons, claims 1-3, 10, 13, 17-20, 22, 23 and 26 are patentable under 35 USC §103(a) over Raines in view of Winter, and applicant respectfully requests withdrawal of the rejection of the claims thereunder.

Claims 4, 5, 6, 7, 8 and 25

In response to the rejection of claims 4, 5, 6, 7, 8 and 25 under §103(a) over Raines in view of Trott, applicant respectfully asserts that Trott suffers the same shortcomings of Raines in view of Winter, as set forth above in response to the rejection of amended independent claims 1 and 18 over Raines in view of Winter, where claims 4, 5, 6, 7, 8 and 25 depend from claim 1.

That is, while Trott may teach the use of pins (32) for connecting a blade in at least three or four rotary positions, the pins are rounded.

Nether Raines nor Trott teach or suggest at least one slaving face that extends radially outward in an axial direction relative to an axis of the actuator shaft (12), twelve form-locking elements (34) located on receptor plate (14) that are distributed uniformly over an angular range defined by an entire circumference of a circular bearing face of the receptor plate (14) or twelve form-locking elements (34) having a trapezoidal cross section perpendicular to the drive shaft, as required by claim 1 (as argued above), from which each of claims 4, 5, 7 and 8 depend.

Accordingly, applicant respectfully requests withdrawal of the rejection of claims 4, 5, 6, 7, 8 and 25 under 35 USC §103(a) over Raines in view of Trott.

Claim 14

In response to the rejection of claim 14 over Raines in view of Hutchins under 35 USC §103(a), applicant respectfully asserts that while Hutchins teaches the use of a chamfer to easily secure a blade, Hutchins nevertheless fails to overcome the shortcomings of Raines as set forth above in response to the rejection of claim 1 over Raines.

That is, Hutchins discloses a tool (10) that can be fastened to a device of a saw that is driven in an oscillating fashion. While Hutchins includes form-locking elements for engaging with offset slots (14) of tool (10), the form-locking elements have a rectangular cross section and in amounted state of the tool (10) the offset slots (14) only abut on contact points of the form-locking elements.

Neither Raines not Hutchins teach or suggest offset slots having a trapezoidal cross section of form-locking elements of a device for fastening the tool (10), whereby in a mounted state each of the offset slots abut on at least one slaving face that extends radially outward in an axial direction relative to an axis of the actuator shaft (12), twelve form-locking elements (34) located on receptor plate (14) that are distributed uniformly over an angular range defined by an entire circumference of a circular bearing face of the receptor plate (14) or twelve form-locking elements (34) have a trapezoidal cross section that is perpendicular to the drive shaft, as set forth in claims 1 and 14.

Accordingly, applicant respectfully requests withdrawal of the rejection of claim 14 under 35 USC §103(a) over Raines in view of Hutchins.

Claims 15 and 16

In response to the rejection of claims 15 and 16 over Raines in view of Jasch under 35 USC §103(a), applicant respectfully asserts that while Jasch teaches the use of a spring element (98) for the purpose of preventing a release of a screw in operation, Jasch nevertheless fails to overcome the shortcomings of Raines as set forth above in response to the rejection of claim 1 over Raines.

Neither Raines not Jasch teach or suggest offset slots having a trapezoidal cross section of form-locking elements of a device for fastening the tool (10), whereby in a mounted state each of the offset slots abut on at least one slaving face that extends radially outward in an axial direction relative to an axis of the actuator shaft (12), twelve form-locking elements (34) located on receptor plate (14) that are distributed uniformly over an angular range defined by an entire circumference of a circular bearing face of the receptor plate (14) or twelve form-locking elements (34) that have a trapezoidal cross section that is perpendicular to the drive shaft, as set forth in claims 1, 15 and 16.

Accordingly, applicant respectfully requests withdrawal of the rejection of claim 15 and 16 under 35 USC §103(a) over Raines in view of Jasch.

Claim 24

While the Examiner asserts that Raines discloses the invention as set forth in claim 1 but for twelve rotary positions that differ from each other by their adjacent rotary positions by 30 degrees, and it would have been obvious to modify Raines by providing twelve rotary positions that differ from each other by 30 degrees, applicant respectfully disagrees.

Raines does not disclose or suggest form-locking elements (e.g., form-locking element (34)), that have at least one slaving face that extends radially outward in an axial direction relative to an axis of the actuator shaft (12), twelve form-locking elements (34) located on receptor plate (14), which are distributed uniformly over an angular range defined by an entire circumference of a circular bearing face of the receptor plate (14) or twelve form-locking elements (34) have a trapezoidal cross section that is perpendicular to the drive shaft, as claimed.

Accordingly, claim 24 is patentable over Raines under 35 USC §103(a), for at least these reasons, and applicant respectfully requests withdrawal of the rejection thereunder.

Claims 27-29 and 32

To support the rejection of claims 27-29 and 32, the Examiner asserts arguments similar to the Raines-based arguments **A.)** and **B.)**, asserted above in the rejection of claims 1 and 18 over Raines in view of Winter, further adding that Jasch discloses a spring element 98 for preventing the release of a screw in operation, that the spring element 98 is capable of deflecting past the chamfers and is shaped like a cup spring (Fig. 16) and that it would have been obvious to modify Raines with the spring element 98, as taught by Jasch, to realize a device that prevents the release of the screw in operation.

Applicant respectfully directs the Examiner's attention to his response to arguments **A.)** and **B.)**, set forth above in response to the rejection of claims 1 and 18.

As the instant rejection further relates to Jasch, applicant respectfully asserts that Jasch discloses adapted 90d for securing tool 50c, with head 38d of securing screw 36d configured in a flange-like manner. On the side of head 38d facing drive shaft 16 is a recess 100 for receiving a spring element 98 in the form of a disk spring. The disk spring rests on adapter 90d to prevent the release of the screw 36d.

While the spring element 98 may be in a form of a cup spring, applicant does not see that spring element 98 is capable of automatically deflecting past the chamfers of the more than eight form-locking elements. Hence, modifying Raines as taught by Jasch would not realize the invention of claim 27.

Hutchins discloses a tool (10) that can be fastened to a device of a saw that is driven in an oscillating fashion. While Hutchins includes form-locking elements for engaging with offset slots (14) of tool (10), the form-locking elements have a rectangular cross section and in a mounted state of the tool (10), the offset slots (14) only abut on contact points of the form-locking elements.

Hence, none of Raines, Jasch, Winter or Hutchins teach or suggest neither more than eight form-locking elements, each with a chamfer, a radius of the form-locking elements that is four times as large as the radius of the centering element, form-locking elements that have a trapezoidal cross section that is perpendicular to the drive shaft and a folding screw with a spring element that in a mounted state deflects the tool past the chamfer, as claimed.

Accordingly, amended independent claim 27, claims 28, 29 and claim 32, which depend from claim 27, are patentable over Raines in view of Jasch and further in view

of Winter and still further in view of Hutchins under 35 USC §103(a), and applicant respectfully requests withdrawal of the rejections thereunder.

Claim 30

To support the rejection of claim 30, the Examiner asserts that Raines discloses the invention as claimed but for the inclined section and a quadrangular cross section/trapezoidal cross section perpendicular to the axis of the shaft, that Arnegger teaches a locking element 51 with inclined section 52 (Fig. 5) to allow better accessibility for cutting operations, and that Winter teaches a locking element 19 with a trapezoidal cross section perpendicular to the axis of the shaft.

The Examiner concludes that it would have been obvious to modify Raines as taught by Arnegger to enable better accessibility to perform cutting operations, and as taught by Winter to obtain a device that provides a secure and stable blade engagement.

Arnegger discloses a tool 55 comprising a first tool part 51 and a second tool part 50 that is parallel to the first tool part 51. First tool part 51 and second tool part 50 are connected via an inclined section 52. Arnegger does not teach or suggest form-locking elements provided that correspond to a trapezoidal cross section that is perpendicular to a drive shaft, which form-locking elements are distributed uniformly over an annular range defined by an entire circumference of a circular face of a fastening portion.

While Arnegger may teach a first tool part arranged in parallel to a second tool part that is connected to said first tool part via an inclined section, applicant respectfully disagrees that Winter teaches a locking element 19 with a trapezoidal cross section

perpendicular to the axis of the shaft, as stated above in response to the rejection of claims 1 and 18 over Raines in view of Winter.

Accordingly, independent claim 30 is patentable over Raines in view of Arnegger further in view of Winter under 35 USC §103(a), and applicant respectfully requests withdrawal of the rejections thereunder.

Applicant also takes this opportunity to present new claims 34-38 for examination.

New independent claims 34 and 35 call out devices with a centering element (10), a bearing flange (38) comprising a circular bearing face and twelve form-locking elements (12) located on said bearing flange (38) for fastening an axially mountable tool (14) to a drive shaft (16) of a hand-held power tool, where the centering element (10) is for centering the tool (14) relative the drive shaft (16).

The twelve form-locking elements (12) are provided for defining a rotary position of said tool (14) relative to said drive shaft (16). Each of the twelve form-locking elements (12) has at least one slaving face (22) extended radially outward and in an axial direction relative to an axis of the drive shaft (16). The twelve form-locking elements (12) are located radially outside the centering element (10), and distributed uniformly over an angular range that is defined by an entire circumference of the circular bearing face.

Independent claim 34 further includes that a radius associated with one position of the twelve form-locking elements (12) is four times as large as a radius of said centering element (10), that the twelve form-locking elements (12) have a trapezoidal cross section which is perpendicular to an axis of the drive shaft (16) and are configured

to operate with at least one tool having a triple symmetry and with at least one tool having a quadruple symmetry.

Independent claim 35 further includes that the twelve form-locking elements (12) have a quadrangular cross section which is perpendicular to an axis of the drive shaft (16).

Claim 36 further limits the device of claim 35 such that each of the form-locking elements has at least one rounded edge.

Claim 37 further limits the device of claim 35 such that a radius associated with one position of the twelve form-locking elements (12) is four times as large as a radius of the centering element (10).

Claim 38 further limits the device of claim 35 such that the twelve form-locking elements (12) are configured to operate with at least one tool having a triple symmetry and with at least one tool having a quadruple symmetry.

Support for new claim 34 is found in the Specification at page 3, lines 1-4, where support for new claim 35 is found at page 2, lines 22-26. Support for new claims 35 and 36 is found in Figs. 1 and 2.

Applicant respectfully asserts that the features of new claims 34-38 are not found in the prior art, and that all of these claims are allowable.

Accordingly, the application as amended is believed to be in condition for allowance. Action to this end is courteously solicited. However, should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call in order to discuss appropriate claim language that will place the application in condition for allowance.

Respectfully submitted,

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